16 May 2006

Ms. Kasey Ashley
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Subject: Results of March 2006 Semi-Annual Groundwater Monitoring and Revised Remedial Action Plan
Shoreline Development Property
2 T Street, Eureka, California

Dear Ms. Ashley:

This letter transmits results of groundwater monitoring performed in March 2006 at the Shoreline Development Property in Eureka, California (Figure 1). GeoSyntec Consultants prepared this report on behalf of Shell Oil Company.

BACKGROUND

Prior to the March 2006 sampling event, groundwater monitoring at the site had been conducted on an annual basis, in accordance with Monitoring and Reporting Program (MRP) No. R1-2001-83, issued on 30 July 2001 by the California Regional Water Quality Control Board, North Coast Region (RWQCB)[1]. By letter dated 21 November 2005, the RWQCB provided comments on the August 2005 Groundwater Monitoring Report[2]. In their comments, the RWQCB requested the following:

[1] RWQCB, 2001, "Concurrence with Remedial Action Plan," 30 July.
[2] California Regional Water Quality Control Board, North Coast Region (RWQCB), 2005, "Comments on Results of August 2005 Groundwater Monitoring," Shoreline Development, 2 T Street, Eureka, California, 21 November.

- review of the remedy selection process used for the site Remedial Action Plan (RAP);
- a work plan to evaluate the extent of groundwater impacts in the vicinity of downgradient monitoring well MW-1 and the location of the surface water-groundwater interface; and,
- submittal of the 2005 annual groundwater monitoring report.

GeoSyntec prepared the Response to Request for Work Plan[3] in response to the RWQCB's 21 November 2005 letter. In GeoSyntec's response, semi-annual groundwater monitoring of four of the site monitoring wells (MW-1, MW-2, MW-6, and MW-7) was proposed, with the groundwater samples analyzed for total petroleum hydrocarbons as diesel (TPHd), chloride, and total dissolved solids (TDS). The RWQCB verbally approved the monitoring program in a 27 January 2006 phone call with GeoSyntec. The monitoring program was formally approved in a 30 January 2006 letter from the RWQCB.[4] The 14 March 2006 monitoring event was performed in accordance with the approved monitoring program.

SITE SETTING AND BACKGROUND

The 2.6-acre site is located at 2 T Street, in Eureka, California and is bounded on the north by Humboldt Bay. The site elevation is approximately 10 feet above mean sea level (MSL). The site was formerly the location of a bulk petroleum storage facility that contained six aboveground storage tanks, five underground storage tanks and an unlined retaining basin. Currently, the site is unpaved and vacant.

Between 1995 and 1997, approximately 10,000 cubic yards (yd^3) of hydrocarbon-impacted soil was excavated from 5 areas in the southern portion of the site, treated on-

[3] GeoSyntec Consultants, 2006, "Response to Request for Work Plan," Shoreline Development Property, 2 T Street, Eureka, California, 13 January.
[4] RWQCB, 2006, "Comments on Responses to Request for Work Plan," Shoreline Development, 2 T Street, Eureka, California, 30 January.

site and then replaced in the excavations together with clean backfill. The soil data from the excavation indicated the soil cleanup goals were met with the excavation activities; however, the groundwater quality goal of 50 micrograms per liter (µg/L) for total extractable petroleum hydrocarbons (diesel-range hydrocarbons) was not met. In the RAP for the site, Shell proposed monitored natural attenuation for the diesel-range hydrocarbons present in groundwater[5]. In their approval of the RAP, the RWQCB issued MRP No. R1-2001-83, which required groundwater monitoring on an annual basis to verify the groundwater remedy for the site.

The current property owner intends to develop the site; however, the plans are not yet final or available to the public. In the 13 January 2006 Response to Request for Work Plan, GeoSyntec reported that, according to the site owner's representative, SCS Engineers, the plans for site development included: 1) the majority of the site would be developed into a park; and, 2) the drainage channel presently on the east site boundary would be expanded via excavation. In preparation for this report, GeoSyntec re-contacted SCS Engineers on 17 April 2006 and learned the site development plans have changed since the January 2006 report, but that no alternative plans are certain or available at this time.

SAMPLING PROCEDURES

The monitoring well network at the site consists of six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7) and two off-site, upgradient monitoring wells (MW-9 and MW-10) installed in December 1991 and January 1994 at locations shown on Figure 2. Monitoring wells MW-5 and MW-8 were destroyed during soil excavation activities in 1995.

Groundwater monitoring was performed on 14 March 2006 and consisted of measuring water levels in the accessible site monitoring wells and collecting and analyzing groundwater samples from wells MW-1, MW-2, and MW-6. The standpipe

[5] Pacific Environmental Group, 1999, "Remedial Action Plan," Former Shell Bulk Fuel Terminal, 2 T Street, Eureka, California, Case No. 1THUO78, 6 July.

for monitoring well MW-4 was bent; therefore, water level elevation was not measured. MW-7 was not accessible for sampling, due to a large volume of water covering the well box. Blaine Tech Services, Inc. (Blaine Tech) of Sacramento, California performed the fieldwork and their sampling logs are provided in Attachment 1.

GROUNDWATER ELEVATION AND FLOW DIRECTION

Before measuring the depth to groundwater, Blaine Tech used an interface probe to evaluate the presence of floating product; none was detected in any of the wells. The depth to groundwater at the site ranged from 0.68 feet below top of casing (btoc) in monitoring well MW-10 to 7.06 feet btoc in monitoring well MW-6. Table 1 summarizes groundwater levels measured during sampling events since October 2001, including the current event. Water levels from the current sampling event are consistent with historical observations. Groundwater elevation contours for the March 2006 sampling event are shown on Figure 2.

The groundwater flow direction for the March 2006 monitoring event is predominantly to the north with an easterly flow component in the northern boundary of the site. The average flow gradient is 0.0103 ft/ft (54.21 ft/mile). The historical groundwater flow direction has been typically to the north under a similar gradient.

ANALYTICAL RESULTS

Calscience Environmental of Garden Grove, California, provided all sample containers and analyzed the groundwater samples collected from monitoring wells MW-1, MW-2, and MW-6. Calscience analyzed the samples for total petroleum hydrocarbon as diesel (TPHd) with and without silica gel cleanup using EPA Method 8015M, TDS by EPA Method 160.1, and chloride by EPA Method 300.0. The TPHd analyses were run with silica gel cleanup to remove organic material that may influence the diesel concentration determination. The March 2006 event was the first time chloride and TDS were included in the sample analyte list. The analytical laboratory report is provided in Attachment 2.

Results from the TPHd without silica gel cleanup indicated TPHd detection in the three monitoring wells MW-1, MW-2, and MW-6 at concentrations of 120 micrograms per liter (μg/L), 140 μg/L, and 630 μg/L, respectively. With the silica gel cleanup, TPHd concentrations ranged from 79 μg/L in MW-1 to 240 μg/L in MW-6. It appears that naturally occurring hydrocarbons contribute to the TPHd concentrations detected in the analyses performed without the silica gel cleanup.

TDS was detected in the three monitoring wells MW-1, MW-2, and MW-6 at concentrations of 3,950 milligrams per liter (mg/L), 464 mg/L, and 1,040 mg/L, respectively. Concentrations of chloride in the three monitoring wells MW-1, MW-2, and MW-6 were 1,900 mg/L, 62 mg/L, and 140 mg/L, respectively.

QA/QC REVIEW OF ANALYTICAL DATA

GeoSyntec conducted a quality assurance/quality control (QA/QC) review of the analytical data. Data were reviewed for completeness, accuracy, precision, sample contamination, conformance with holding times, and detection limits within acceptable ranges. The results of the review indicate the data are of acceptable quality.

REVISED REMEDIAL ACTION PLAN (RAP)

The RAP was submitted to the RWQCB on 15 June 2000[6]. In the RAP, natural attenuation was selected as the remedial option for groundwater. To implement the natural attenuation remedial option, annual groundwater monitoring was performed in four site wells, MW-1, -2, -6, and -7, and the results were reported to the RWQCB annually. The RAP proposed that annual monitoring continue until:

- TPHd in the three downgradient, perimeter wells (MW-1, MW-2, and MW-7) met the site water quality goal of 50 μg/L for two consecutive events; and,
- TPHd in MW-6 showed a decreasing trend.

[6] IT Corporation, 2000. *"Remedial Action Plan, Former Shell Bulk Fuel Terminal."* 15 June.

These goals have not been achieved to date.

As discussed in the Site Setting and Background section above, the current property owner intends to develop the site; however, the plans are not yet final or available to the public. Conceptual site development plans previously presented to the RWQCB have since changed, and alternative development plans are not certain or available at this time. After development plans for this site are prepared and approved, then the RAP will be revised accordingly and submitted to the RWQCB for review and approval.

FUTURE WORK

In the next six months, the following events will take place at the site:

- Semi-annual groundwater monitoring event will be conducted in the 3rd quarter of 2006, with the results transmitted to RWQCB by 1 November 2006;

- Soil and grab groundwater samples will be collected from four locations situated between MW-1 and MW-7 and the shoreline between Humboldt Bay and the drainage channel, in accordance with the Response to Request for Work Plan. The RWQCB requested a summary report for the soil and groundwater investigation by 30 May 2006; however, due to the wet weather at the site, the investigation will be performed after 30 May 2006. GeoSyntec will notify the RWQCB two weeks before the scheduled field work. Results of the work will be transmitted to the RWQCB as part of the 1 November 2006 semi-annual groundwater monitoring report; and

- MW-4 will be destroyed in accordance with Humboldt County regulations, due to a badly damaged above-ground well casing.

If you have any questions or comments regarding this monitoring report, please contact Ms. Carol Campagna at (707) 399-7878 or the undersigned at (510) 836-3034.

Sincerely,

D. Scott Felton, P.E.
Project Engineer

PROFESSIONAL GEOLOGIST
CAROLYN R. KNEIBLHER
No. 369
CERTIFIED
HYDROGEOLOGIST
STATE OF CALIFORNIA

Carolyn Kneiblher, C.HG.
Associate Hydrogeologist

Copy w/attachments to:
Ms. Carol Campagna, Shell Oil Company
Mr. Fred Griffith, CUE, IV, LLC
Ms. Linda Mackey-Taverner, SCS Engineers

Attachments:

Table 1	Groundwater Monitoring Results
Figure 1	Site Location Map
Figure 2	Analytical Results and Groundwater Elevation Contour Map
Attachment 1	Blaine Tech Field Report
Attachment 2	Calscience Analytical Data Report

TABLES

Table 1
Groundwater Monitoring Results
Shoreline Development, Eureka, California

Well No.	Date	TOC Elevation (ft msl)[1]	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)	TPHd without silica gel (ug/L)	TPHd with silica gel (ug/L)	TDS (mg/L)	Chloride (mg/L)
MW-1	Mar-06	8.50	2.89	5.61	120	79	3,950	1,900
	Dec-05		2.70	5.80	69	59	--	--
	Aug-05	8.84 [2]	3.78	5.06	630	180	--	--
	Apr-05		5.57	3.27	--	--	--	--
	Dec-04		2.64	6.20	<500	<50	--	--
	Dec-03		2.10	6.74	190	84	--	--
	Dec-02		5.28	3.56	67	<50	--	--
	Oct-01		3.75	5.09	100	100	--	--
MW-2	Mar-06	9.15	0.73	8.42	140	120	464	62
	Dec-05		4.06	5.09	1,400	210	--	--
	Aug-05	9.48 [2]	3.80	5.68	1,000	440	--	--
	Apr-05		1.67	7.81	--	--	--	--
	Dec-04		0.43	9.05	<500	<50	--	--
	Dec-03		1.72	7.76	520	120	--	--
	Dec-02		4.40	5.08	200	<50	--	--
	Oct-01		4.25	5.23	560	300	--	--
MW-3	Mar-06	12.98	4.24	8.74	--	--	--	--
	Dec-05		4.87	8.11	870	150	--	--
	Aug-05	9.16 [2,3]	6.60	NE	--	--	--	--
	Apr-05		4.72	NE	--	--	--	--
	Dec-04		3.96	NE	--	--	--	--
	Dec-03		4.27	NE	--	--	--	--
	Dec-02		6.35	NE	--	--	--	--
	Oct-01		7.80	NE	--	--	--	--
MW-4	Mar-06	12.58	NM	--	--	--	--	--
	Dec-05		4.36	8.22	--	--	--	--
	Aug-05	9.28 [2,3]	NS [4]	NE	--	--	--	--
	Apr-05		3.21	NE	--	--	--	--
	Dec-04		3.11	NE	--	--	--	--
	Dec-03		4.00	NE	--	--	--	--
	Dec-02		7.04	NE	--	--	--	--
	Oct-01		8.10	NE	--	--	--	--
MW-6	Mar-06	13.10	7.06	6.04	500 / 630	150 / 240	993 / 1,040	140 / 140
	Dec-05		7.55	5.55	1,700	260	--	--
	Aug-05	9.59 [2,3]	8.37	NE	1,900	550	--	--
	Apr-05		10.09	NE	990	170	--	--
	Dec-04		7.21	NE	1,800	110	--	--
	Dec-03		6.64	NE	2,100	920	--	--
	Dec-02		7.79	NE	180	<50	--	--
	Oct-01		8.25	NE	410	200	--	--

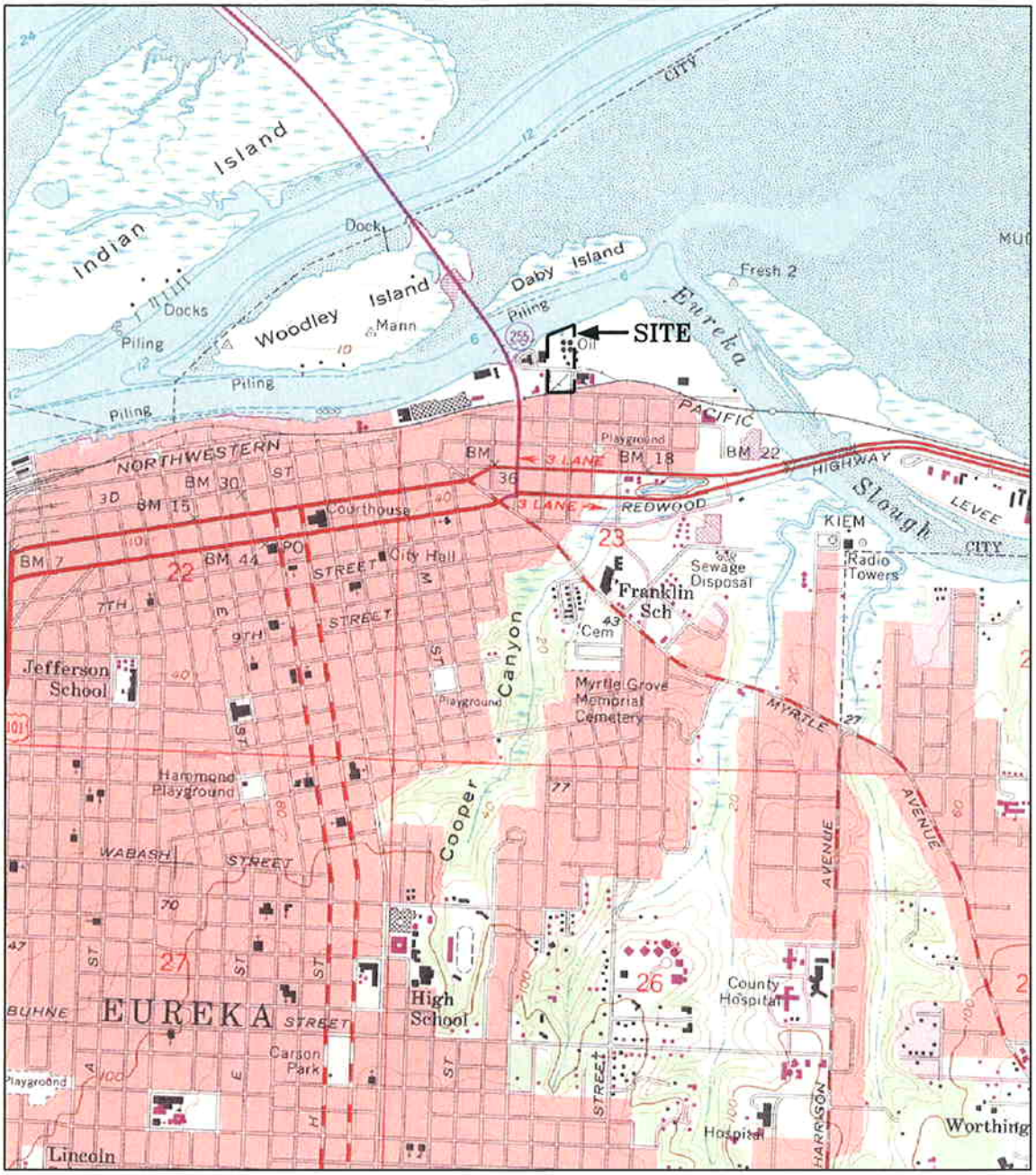
Table 1
Groundwater Monitoring Results
Shoreline Development, Eureka, California

Well No.	Date	TOC Elevation (ft msl)[1]	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)	TPHd without silica gel (ug/L)	TPHd with silica gel (ug/L)	TDS (mg/L)	Chloride (mg/L)
MW-7	Mar-06	8.40	NM [5]	--	--	--	--	--
	Dec-05		2.38	6.02	620 / 490	53 / <50	--	--
	Aug-05	8.73 [2]	3.38	5.35	1000	560	--	--
	Apr-05		3.61	5.12	430	110	--	--
	Dec-04		--	NS	NS	NS	--	--
	Dec-03		2.18	6.55	1,200	410	--	--
	Dec-02		3.56	5.17	59	<50	--	--
	Oct-01		3.55	5.18	98	40	--	--
MW-9	Mar-06	10.31	1.02	9.29	--	--	--	--
	Dec-05		2.72	7.59	570	67	--	--
	Aug-05	10.81 [2]	3.13	7.68	--	--	--	--
	Apr-05		1.16	9.65	--	--	--	--
	Dec-04		1.20	9.61	--	--	--	--
	Dec-03		1.76	9.05	--	--	--	--
	Dec-02		3.22	7.59	--	--	--	--
	Oct-01		3.90	6.91	--	--	--	--
MW-10	Mar-06	10.29	0.68	9.61	--	--	--	--
	Dec-05		2.31	7.98	240	<50	--	--
	Aug-05	10.81 [2]	3.11	7.7	--	--	--	--
	Apr-05		1.41	9.40	--	--	--	--
	Dec-04		0.85	9.96	--	--	--	--
	Dec-03		1.68	9.13	--	--	--	--
	Dec-02		3.23	7.58	--	--	--	--
	Oct-01		4.15	6.66	--	--	--	--

Notes:
1) Top of casing (TOC) elevation surveyed on 11 January 2006
2) Top of casing (TOC) elevation surveyed October 1995
3) Casing elevation in doubt; groundwater elevation not calculated
4) Monitoring well was dry
5) Unable to access MW-7 as the well was under large volume of water

"--" Not Sampled
NE - Not Estimated
"/" - Sample / Duplicate
TDS - Total Dissolved Solids
btoc - below top of casing
TPHd - Total Petroleum Hydrocarbons as diesel
NS - Not sampled
NM - Not Measured
ft - feet
msl - mean sea level

FIGURES



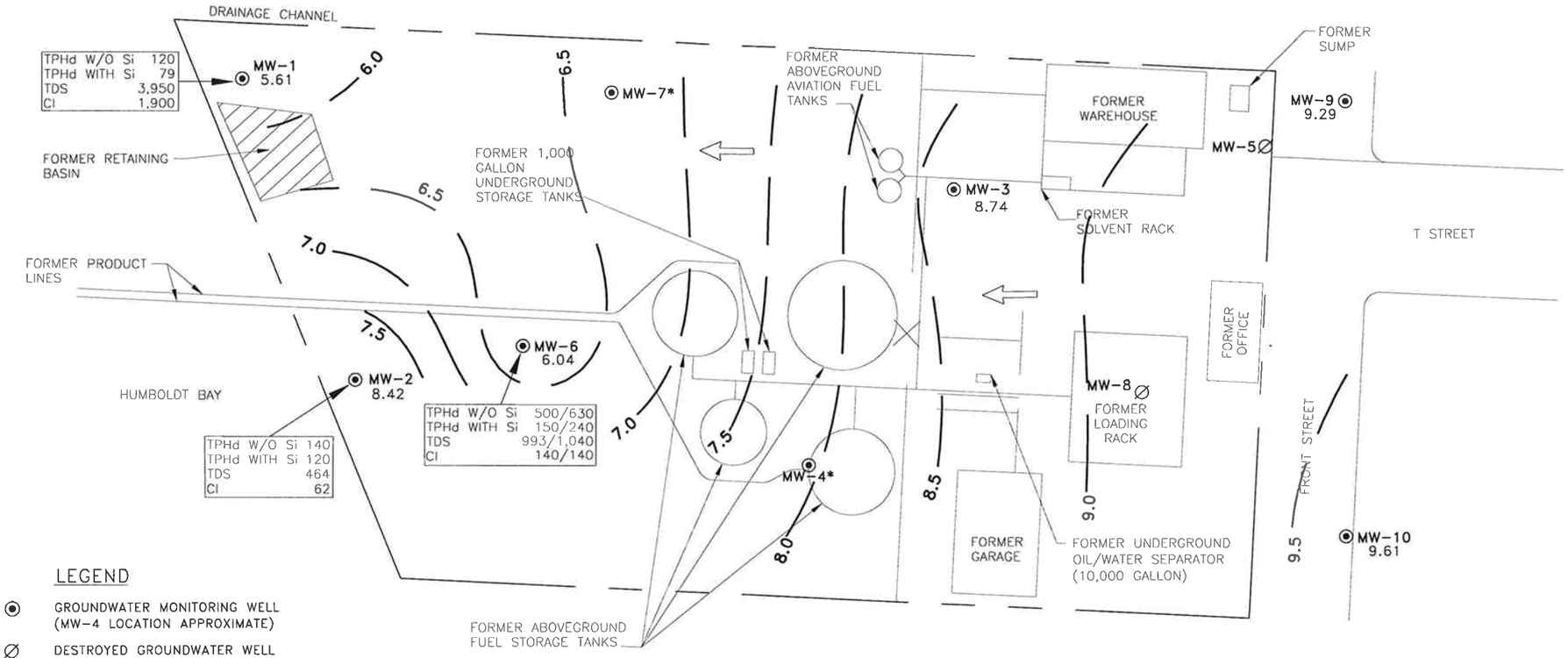
Topo Source: U.S.G.S. 7.5 Minute Series,
Eureka, CA Quadrangle (1972)
Contour Interval = 20 ft

0 1000 2000
APPROX.
SCALE IN FEET

SITE LOCATION MAP
SHELL SHORELINE DEVELOPMENT
EUREKA, CALIFORNIA

GeoSyntec Consultants

FIGURE NO.	1
PROJECT NO.	WR0575
DATE	NOVEMBER_2005
FILE NO.	SITE_LOCATION



LEGEND

MW-1 ⊙	GROUNDWATER MONITORING WELL (MW-4 LOCATION APPROXIMATE)
MW-5 ∅	DESTROYED GROUNDWATER WELL
5.61	GROUNDWATER ELEVATION IN FEET-MSL, 03/14/06, BASED ON 11 JANUARY 2006 SURVEY DATA
7.0	GROUNDWATER ELEVATION CONTOUR IN FEET-MSL
*	GROUNDWATER ELEVATION NOT MEASURED DUE TO ACCESS ISSUES
	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
TPHd W/O Si 120 TPHd WITH Si 79 TDS 3,950 Cl 1,900	TPHd WITHOUT SILICA GEL CLEANUP (ug/L) TPHd WITH SILICA GEL CLEANUP (ug/L) TOTAL DISSOLVED SOLIDS (mg/L) CHLORIDE (mg/L)
/	PRIMARY SAMPLE/DUPLICATE

N

0 30 60

SCALE IN FEET

GeoSyntec Consultants

GROUNDWATER MONITORING RESULTS – MARCH 2006
SHORELINE DEVELOPMENT PROPERTY
2 T STREET, EUREKA, CALIFORNIA

FIGURE NO. 2
PROJECT NO. WR0575
DATE: 14 MARCH 2006

ATTACHMENT 1

BLAINE TECH FIELD REPORT

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 060314-DL1

CLIENT: Geosyntec Consultants

SITE: Shoreline Development
2 T Street
Eureka, CA

CONDUCT ANALYSIS TO DETECT

LAB: Calscience DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
- ☐ EPA
- ☐ LIA
- ☐ OTHER
- ☐ RWQCB REGION _____

SPECIAL INSTRUCTIONS

Fax COC to Geosytec Consultants Attn: Susan Skoe after log in. Fax # 925-943-2366

Report to : Geosyntec Consultants Attn: Susan Skoe
TPH-D with & without Silica Gel Clean up (lowest possoble detection limits)

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TDS	Chloride	TPH-D (8015M)(w/woSilica Gel Clean up)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	3/14	1520		3		X	X	X				
MW-2	"	1505		3		X	X	X				
MW-6	"	1335		3		X	X	X				
DUP-1	"			3		X	X	X				

SAMPLING COMPLETED DATE: 3/14/06 TIME: 1540 SAMPLING PERFORMED BY: D. Mosiela

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Shipped FedEx	3/15/06	1630			

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

WELL GAUGING DATA

Project # 060314-DU1 Date 3/14/06 Client Geosyntec

Site Shoreline Development Eureka, CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	4					2.89	17.30	TOC	3
MW-2	4					0.73	18.15		2
MW-3	4					4.24	21.64		
MW-4	—	Bent	stand pipe			—	—		
MW-6	4					7.06	18.37		1
MW-7	—	Unable to access; under large volume of water.							4
MW-9	3					1.02	14.70		
MW-10	3					0.68	11.31		

WELLHEAD INSPECTION CHECKLIST

Client Geosyntec Date 3/14/06

Site Address 2 T Street Eureka, CA

Job Number 060314.DK1 Technician D. Klawitter

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1	Christie Box							
MW-2	X							
MW-3	Stand Pipe (OK)							
MW-4	Bent Stand Pipe							
MW-6	Stand Pipe (OK)							
MW-7	Under Water							
MW-9	Well Box Destroyed							
MW-10	X							

NOTES:

WELL MONITORING DATA SHEET

BTS #: 060314-DK1	Client: GeoSyntec
Sampler: Dan Koskela	Date: 3/14/06
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 17.30	Depth to Water (DTW): 2.89
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.77	

14.41

Purge Method: Bailer / Disposable Bailer / Postive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____

Sampling Method: Bailer / Disposable Bailer / Extraction Port / Dedicated Tubing / Other: _____

9.4 (Gals.) X 3 = 28.2 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	D.O Observations	Sal%
1429	54.2	7.1	6662	270	9.5	0.8	0.0
1441	55.0	6.9	7084	163	19.0	0.8	0.0
1452	55.1	6.8	7196	116	28.5	1.1	0.0
Well Dry @ 30 %							
				Recharge Rate		1.6 ft/min	

Did well dewater? Yes (No) Gallons actually evacuated: 28.5

Sampling Date: 3/14/06 Sampling Time: 1520 Depth to Water: 2.71

Sample I.D.: MW-1 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

BTS #: 060313-DK1	Client: GeoSyntec
Sampler: Dan Koskela	Date: 3/14/06
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 18.15	Depth to Water (DTW): .73
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.21	

Purge Method: Bailer ✕ / Disposable Bailer / Postive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other_____

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Dedicated Tubing / Other: _____

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

11.3 (Gals.) X 3 = 33.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	D.O Observations	
1349	52.6	7.3	1926	309	11.5	1.7	0.0
1402	52.9	7.2	1474	544	23.0	2.1	0.0
1412	53.2	7.1	1366	408	34.0	1.9	0.0
Not @	80%						
				Recharge Rate 1.0 ft/min			

Did well dewater? Yes (No) Gallons actually evacuated: 34.0

Sampling Date: 3/14/06 Sampling Time: 1505 Depth to Water: 2.16

Sample I.D.: MW-2 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

BTS #: 060314-DK1	Client: GeoSyntec
Sampler: Dan Koskela	Date: 3/14/06
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth (TD): 18.32	Depth to Water (DTW): 7.06
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.31	

Purge Method: Bailer ✓ / Disposable Bailer / Postive Air Displacement / Electric Submersible / Waterra / Peristaltic / Extraction Pump / Other____

11.26

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Dedicated Tubing / Other: ____

7.3 (Gals.) X 3 = 21.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	DO Observations	Sal %
1307	53.1	7.2	1502	474	7.5	1.1	0.0
1317	53.7	7.1	1635	666	15.0	1.4	0.0
1325	53.9	7.0	1683	788	22.0	1.6	0.0
				Recharge Rate 1.9		ft/min	

Did well dewater? Yes (No) Gallons actually evacuated: 22.0

Sampling Date: 3/14/06 Sampling Time: 1335 Depth to Water: 7.26

Sample I.D.: MW-6 Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DUP-1

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

BTS #: 060314-DK1	Client: GeoSyntec
Sampler: Dan Koskela	Date: 3/14/06
Well I.D.: MW-7	Well Diameter: 2 3 4 6 8 ____
Total Well Depth (TD):	Depth to Water (DTW):
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer, Disposable Bailer, Postive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: Bailer, Disposable Bailer, Extraction Port, Dedicated Tubing, Other: _____

_____(Gals.) X _____ = _____ Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
	Well		Under	Water		
		*	No Sample Taken			

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: Sampling Time: Depth to Water:

Sample I.D.: Laboratory: Calscience

Analyzed for: TPH-D with and without silica gel cleanup

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ATTACHMENT 2

CALSCIENCE ANALYTICAL DATA REPORT

Calscience Environmental Laboratories, Inc.

March 23, 2006

Susan Skoe
GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Subject: **Calscience Work Order No.: 06-03-0958**
Client Reference: Shoreline Development - 2T Street, Eureka, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/16/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Don Burley
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received:	03/16/06
Work Order No:	06-03-0958
Preparation:	EPA 3510C
Method:	DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-1	**06-03-0958-1**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	120	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	72	68-140	

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-1	**06-03-0958-1**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.
-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	79	50	1		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-2	**06-03-0958-2**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	140	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	68	68-140	

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-2	**06-03-0958-2**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.
-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	120	50	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants		Date Received:	03/16/06
475 14th Street, Suite 450		Work Order No:	06-03-0958
Oakland, CA 94612-1940		Preparation:	EPA 3510C
		Method:	DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-6	**06-03-0958-3**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	500	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	74	68-140	

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-6	**06-03-0958-3**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.
-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	150	50	1		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
DUP-1	**06-03-0958-4**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	630	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	96	68-140	

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
DUP-1	**06-03-0958-4**	**03/14/06**	**Aqueous**	**03/21/06**	**03/22/06**	**060321B03**

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.
-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	240	50	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received:	03/16/06
Work Order No:	06-03-0958
Preparation:	EPA 3510C
Method:	DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	**098-03-039-1,259**	**N/A**	**Aqueous**	**03/21/06**	**03/21/06**	**060321B03**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	107	68-140	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: 03/16/06
Work Order No: 06-03-0958

Project: Shoreline Development - 2T Street, Eureka, CA

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-1	**06-03-0958-1**	**03/14/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total Dissolved	3950	10	1		mg/L	N/A	03/20/06	EPA 160.1
Chloride	1900	200	200		mg/L	N/A	03/20/06	EPA 300.0

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-2	**06-03-0958-2**	**03/14/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total Dissolved	464	1.0	1		mg/L	N/A	03/20/06	EPA 160.1
Chloride	62	10	10		mg/L	N/A	03/17/06	EPA 300.0

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-6	**06-03-0958-3**	**03/14/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total Dissolved	993	1.0	1		mg/L	N/A	03/20/06	EPA 160.1
Chloride	140	20	20		mg/L	N/A	03/20/06	EPA 300.0

Client Sample Number	Lab Sample Number	Date Collected	Matrix
DUP-1	**06-03-0958-4**	**03/14/06**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total Dissolved	1040	10	1		mg/L	N/A	03/20/06	EPA 160.1
Chloride	140	20	20		mg/L	N/A	03/20/06	EPA 300.0

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: 03/16/06
Work Order No: 06-03-0958

Project: Shoreline Development - 2T Street, Eureka, CA

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total Dissolved	ND	1.0	1		mg/L	N/A	03/20/06	EPA 160.1
Chloride	ND	1.0	1		mg/L	N/A	03/16/06	EPA 300.0

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: N/A
Work Order No: 06-03-0958

Project: Shoreline Development - 2T Street, Eureka, CA

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Chloride	EPA 300.0	MW-2	03/17/06	N/A	102	100	56-134	2	0-3	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: N/A
Work Order No: 06-03-0958

Project: Shoreline Development - 2T Street, Eureka, CA

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	EPA 160.1	06-03-0971-1	03/20/06	1350	1350	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received:	N/A
Work Order No:	06-03-0958
Preparation:	EPA 3510C
Method:	DHS LUFT

Project: Shoreline Development - 2T Street, Eureka, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
098-03-039-1,259	**Aqueous**	**GC 23**	**03/21/06**	**03/22/06**	**060321B03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	98	100	75-117	2	0-13	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

GeoSyntec Consultants
475 14th Street, Suite 450
Oakland, CA 94612-1940

Date Received: N/A
Work Order No: 06-03-0958

Project: Shoreline Development - 2T Street, Eureka, CA

Matrix: Aqueous

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Chloride	EPA 300.0	099-05-118-3,253	N/A	03/16/06	98	96	81-111	3	0-5	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-03-0958

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

0958

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 060314-DL1

CLIENT: Geosyntec Consultants

SITE: Shoreline Development
2 T Street
Eureka, CA

LAB: Calscience | DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Fax COC to Geosytec Consultants Attn: Susan Skoe

after log in. Fax # 925-943-2366

Report to : Geosyntec Consultants Attn: Susan Skoe
TPH-D with & without Silica Gel Clean up (lowest possoble detection limits)

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TDS	Chloride	TPH-D (8015M)(w/woSilica Gel Clean up)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	3/14	1520	W	3		X	X	X				
MW-2	"	1505	W	3		X	X	X				
MW-6	"	1335	W	3		X	X	X				
DUP-1	"		W	3		X	X	X				

SAMPLING COMPLETED: DATE 3/14/06 TIME 1540
SAMPLING PERFORMED BY: D. Mosiela

RESULTS NEEDED NO LATER THAN: Standard TAT

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Shipped FedEx	3/15/06	1630		3-15-06	1527
			Anne COL	3/16/06	1030

SHIPPED VIA: FedEx | DATE SENT | TIME SENT | COOLER #

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 03 - 0958

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: GeoSyntec **DATE:** 03/16/06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
2.3 °C IR thermometer.
_____ Ambient temperature.

Initial: NC

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: NC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: NC

COMMENTS: